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Dr. Joseph D. Lafleur
Deputy Director
Office of International Programs
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: TMI-2 Aftermath with Respect to Future Radiation Monitoring Standards in the Federal Republic of Germany

Dear Dr. Lafleur:

Mr. R. S. Senseney of your office kindly had scheduled a meeting between our Dr. Atakan and NRC Staff on radiation monitoring questions with respect to TMI-2 and its impact on future U. S. standards in this particular field.

Dr. Atakan is not only a BBR employee but also a member of the German KTA (Kerntechnischer Ausschuss) subcommittee dealing with radiation monitoring standards. Dr. Atakan has spent several weeks in the U. S. and studied radiation monitoring information on TMI-2. He was anticipating this meeting with great interest to complete his studies.

Unfortunately, due to unforeseen commitments of the respective NRC Staff, this meeting had to be called off the very last day.

Dr. Atakan has returned to Germany in the meantime. He has listed a couple of questions that were still unanswered after his studies of publicly available information. These questions pertain to the following fields:

- Automatic ventilation shutdown
- Sample taking, and
- Standards improvement ideas

They are listed in the enclosure to this letter.

We should be extremely grateful if NRC could supply us with the answers within two weeks. This would enable the KTA-subcommittee to take into account the lessons learned from TMI-2 while reviewing the German standards on radiation monitoring.

I trust that you won't mind that I shall call you October 17th to make sure the questions are clearly understood.

Sincerely,

Layer

K. O. Layer
BBR Resident Engineer

KOL:bh
Encl.

Enclosure: Questions prepared by Dr. Atakan as member of the German KTA Subcommittee on radiation monitoring standards.

Details of Radiation Monitoring and Ventilation System With Regard to Prevention of Avoidable Radiation Releases

1. With Regard to the Automatic ventilation Isolation and Shutdown Initiated by The High Alarms from the Gaseous Monitors (Reactor Building, Auxiliary Building, Stack, etc.):

   - What is the logic requirement within the monitor? E.g., High Alarm from any one channel (Noble Gas , Particulate, Iodine) or 2 of 3 logic, or else? Which of the 3 monitors govern the damper at the stack?
   - Did the automatic features of the radiation montoring system function properly during the accident, did it work as designed?
   - Did a shutdown of the auxiliary building ventilation occur or was the normal flow rate maintained?
   - If it was shutdown when was the auxiliary building ventilation restored?
   - What levels of radioactivity were present when ventilation was restored?

2. With Regard to Sampling:

   - What is the normal period for replacement of the iodine filter cartridges and particulate filters of the air monitors? How often were these filters replaced immediately after the accident and later?
   - What are the results of any analyses of these filters conducted in laboratories?
   - Immediately after the accident and later, were the three forms of iodine sampled and measured separately (aerosol iodine, elementary iodine, methyl iodine) or were combination filters provided?
   - What are the measurement results of these filters?
   - Is the humidity influence on the iodine filters taken into account in the design and analysis?
   - What was the effect of radiation and airborne activity levels in the auxiliary and fuel handling buildings on access to the filter cartridges of the air monitors?
   - If access was prevented, at what time after the accident was access regained?
   - How long is the tubing between the isokinetic sample nozzles and the filter cartridges/monitors. What are the diameters and materials of the tubing and what is the normal flow rate through it?

3. With Regard to Standards Improvement Ideas:

- Is there any investigation or study in progress to evaluate necessary changes to the radiation monitoring systems in use or for future use in the U.S.A. ? When will final reports be available and from where?

- What are the tendencies from any such studies with regard to:

  o Measuring range of monitors e.g., 10^{-10} CI/m^3 -- 10^{-2} CI/m^3 for noble gases, particulates and iodine,

  o Location of Sample taking vs. sample reading at a different location,

  o Location of monitors cabinets regarding accessibility,

  o Accuracy for various types of measurements,

  o Environmental Qualification of Radiation Monitoring Instrumentation with regard to
    max temperature,
    max pressure,
    max humidity, and
    max radiation.

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